

WHAT IS CLAIMED IS:

1. A method of determining performance impact of individual components of a power plant on overall thermal performance of the power plant, the method comprising:

(a) designing a first thermal model of the power plant using original specification data of the power plant;

(b) developing a second thermal model of the power plant from measured performance data of each component of the power plant; and

(c) determining the performance impact of a selected component of the power plant on the overall thermal performance of the power plant by substituting design performance data of the selected component in the first thermal model with its measured performance data.

2. The method as in claim 1, further comprising:

(d) repeating step (c) until the performance impact of each component of the power plant on the overall thermal performance of the power plant is determined.

3. The method as in claim 1, further comprising: displaying the performance impact of each component on the overall thermal performance of the power plant.

4. The method as in claim 1, wherein step (a) comprises:

i. receiving original specification data in a computer system; and

ii. processing the specification data to design the first thermal model.

5. The method as in claim 1, wherein step (b) comprises:

i. measuring performance data of each component of the power plant;

ii. storing measured performance data in the data acquisition computer;

iii. receiving the measured performance data from the data acquisition computer in a processor system; and

iv. processing data received in the processor system to design the second thermal model.

6. An apparatus for determining performance impact of individual components of a power plant on overall thermal performance of the power plant, comprising:

means for designing a first thermal model of the power plant using original specification data of the power plant;

means for developing a second thermal model of the power plant from measured performance data of each component of the power plant; and

means for determining the performance impact of a selected component of the power plant on the overall thermal performance of the power plant by substituting design performance data of the selected component in the first thermal model with its measured performance data.

7. The apparatus as in claim 6, further comprising:

means for repeating the determining step until the performance impact of each component of the power plant on the overall thermal performance of the power plant is determined.

8. The apparatus as in claim 6, further comprising:

means for displaying the performance impact of each component of the power plant on the overall thermal performance of the power plant.

9. The apparatus as in claim 6, further comprising:

means for receiving original specification data;

means for processing the specification data to design the first thermal model;

means for measuring the performance of each component of the power-plant; and

means for storing measured performance data.

10. The apparatus as in claim 9, further comprising:

means for receiving the measured performance data;
and

means for processing received data to design the
second thermal model.

11. A computer program product comprising a computer
useable medium having computer program logic stored
thereon for enabling a processor in a computer system to
process data, said computer program product comprising:

means for designing a first model using original
specification data of a power plant;

means for developing a second model from measured
performance data of each component of the power plant;
and

means for determining the performance impact of a
selected component of the power plant on the overall
thermal performance of the power plant by substituting
design performance data of the selected component in the
first model with its measured performance data.

12. The computer program product as in claim 11,
further comprising:

means for repeating the determining step until the
performance impact of each component of the power-plant
on the overall thermal performance of the power-plant is
determined; and

means for displaying the performance impact of each component of the power plant on the overall thermal performance of the power plant.

13. The computer program product as in claim 11, wherein the designing means further comprises:

means for receiving original specification data; and

means for processing the specification data to design the first model.

14. The computer program product as in claim 11, wherein the developing means further comprises:

means for measuring the performance of each component of the power plant; and

means for storing measured performance data.

15. The computer program product as in claim 14, further comprises:

means for receiving the stored measured performance data; and

means for processing received data to design the second model.

16. A computer-based method for providing assistance to a user of an application program for assessing the performance impact of individual components of a power

plant on overall thermal performance of the power-plant,
the method comprising the steps of:

(a) using the application program to design a plant thermal model from original power-plant specification data;

(b) using the application program to design a matched thermal plant model from measured performance data of individual components of the power-plant; and

(c) substituting design performance data, of a select component of the power plant, in the plant thermal model with its measured performance data.

17. The computer-based method as in claim 16,
further comprising:

(d) repeating step (c) for each component of the power plant.

18. A computer-readable medium having computer-executable instructions for performing the steps of:

(a) designing a first thermal model of the power plant using original specification data of the power plant;

(b) developing a second thermal model of the power plant from measured performance data of each component of the power plant; and

(c) determining the performance impact of a selected component of the power plant on the overall thermal performance of the power plant by substituting design performance data of the selected component in the first thermal model with its measured performance data.

2025 RELEASE UNDER E.O. 14176